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PATENT & TRADE MARK

**III-V COMPOUND SEMICONDUCTOR FILM AND GROWTH METHOD,
GAN SYSTEM SEMICONDUCTOR FILM AND ITS FORMATION, GAN
SYSTEM SEMICONDUCTOR STACKED STRUCTURE AND ITS
FORMATION, AND GAN SYSTEM SEMICONDUCTOR ELEMENT AND ITS
MANUFACTURE**

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Abstract

PROBLEM TO BE SOLVED: To suppress the introduction of defects by suppressing cracks generated by difference in the thermal expansion coefficients between a growing III-V comp. semiconductor layer and a substrate crystal, and a difference in grid constants.

SOLUTION: Through the use of a substrate limiting a growing region 13 by a mask 14, the facet structure of a III-V comp. semiconductor film 15 is formed (b) by epitaxial growth, for growing (c) the facet structure to cover the mask 14. In addition, the facet structure is completely embedded (d). A III-V comp. semiconductor layer with a flat surface is finally formed (e).

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